



GOES-R AWG Integration Team: Interface with the System Prime

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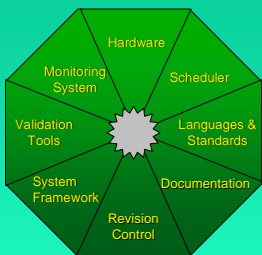
Abstract

The NOAA/NESDIS/STAR GOES-R Algorithm Working Group (AWG) Integration Team will be the interface between the AWG Application Teams and the GOES-R System Prime. The Integration Team will coordinate the activities between the AWG and the System Prime, with the ultimate goal being the smooth transition of the AWG software from development to operations. The software packages that the team delivers will abide by operational coding standards and will have well defined test plans. As the software is transitioned to operations, the Integration Team will work with the System Prime to ensure that the integrity of the scientific algorithms is maintained while enabling a more timely integration of future deliveries. Details on the planned interaction between the System Prime and the NOAA/NESDIS/STAR GOES-R AWG Integration Team will be presented.

Algorithm Working Group (AWG) Integration Team

- Consists of:
 - System Lead
 - Quality Assurance Lead
 - Five Full Time Programmers
- Roles
 - Interface with the AWG Product Teams
 - Integrate AWG Product Systems
 - Quality Assurance Check of the AWG Product Systems
 - Interface with the System Prime
 - Delivery of the AWG Product Systems to the System Prime
- Supply the standards for the AWG product teams:
 - Code examples
 - Framework
 - Documentation Templates
- Configuration Management
 - Coordinate between AWG product development teams
 - Provide technical and software assistance AWG product teams
 - Receive code deliveries from product teams
 - Verify and Review code deliveries
 - Distribute updated software package to product team
- Overall Strategy
 - Deliver pre-operational code with all supporting materials:
 - Test plans
 - Software
 - Implementation documentation
 - Code will adhere to NESDIS Operational Development Standards.
 - All pre-operational code is thoroughly tested within ICED-T.

Integrated Collaborative Environmental Development Test Bed (ICED-T)



- Hardware
 - One IBM Power5+ machine with 16 CPUs
 - 75 TB of disk space on the SAN for all simulated data, proxy data and products.
 - Rack of Dell Processors (30 machines, 120 CPUs) for product development.
- Software
 - Coding Standards
 - Documents are being developed.
 - Product teams will adhere to the standards throughout the development life cycle.
 - Delivery checklists will be provided.
 - Compilers
 - Intel compiler for Linux (5)
 - Portland group compiler for Linux (10)
 - Compiler on IBM AIX machine (xlf90, xLC)
 - Code Checkers
 - Lint
 - Forcheck
 - Revision Control
 - Currently reviewing revision control system.
 - Possible choices are
 - Clear Case, Clear Quest
 - Synergy
 - Working with OSDPD to choose the same revision control system.

GOES-R Collaborative Environment

- The GOES-R Collaborative Environment has two roles:
 - AIT works with the System Prime to integrate the AWG product systems into the pre-operational system.
 - GOES-R Product Validation.
- The AIT will work with the System Prime on the GOES-R Collaborative Environment in two ways:
 - Migrate and test the AWG Product Systems
 - Integration of the AWG Product Systems into an operational system demonstration.

Product Systems Delivered by the AIT

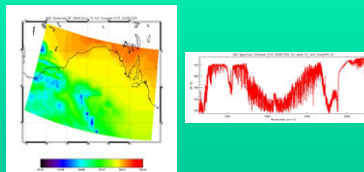
- AIT will create system flowcharts of each of the product systems being created within the AWG.
- AIT will breakdown each of the product systems to find the commonality between them.
- New product systems will be created containing products from a number of the product teams.
- A couple of combined systems will be delivered to the System Prime that take into account the product latency issues that need to be addressed by the System Prime.

Information Required by the AIT

- AIT needs information about:
 - The interface between the AWG product systems the pre-operational system.
 - Error handling calls.
 - Tools used in operational environments
 - Specific operational functions.

Validation Tools Required within Collaborative Environment

- IDL
- Matlab
- Java
- Grads
- McIDAS

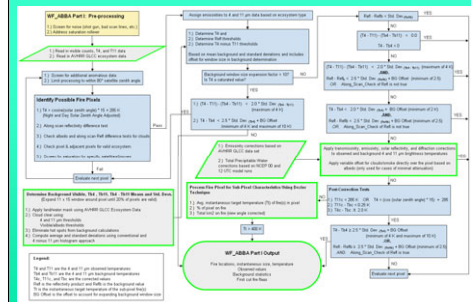


Algorithm Migration Process

- Product System packages will be delivered to the GOES-R Collaborative Environment.
- AIT will work with the System Prime to install and run the product system packages.
- AIT will work with the System Prime to determine where to improve the product latency.
- Flowcharts will be provided with all the delivered product systems.

AWG System Flowchart

- Below is an example of a flowchart that will be used to describe an AWG product system:
 - Example flowchart is for the WF_ABBA system that currently produces Fire Products for the GOES satellite.
 - The flowchart was provided by Elaine Prins, a consultant to CIMSS, at the University of Wisconsin-Madison.
- Flowcharts will include the following information:
 - Inputs and outputs.
 - Function/Subroutine calls.
 - Product generation.



AIT Preferences

- To enable quicker transfers of research code to operations:
 - Would like to have a scaled down version of the operational or pre-operational system on the STAR AWG Collaborative Research Environment.
 - Would like detailed information on the interface of the AWG code with the pre-operational framework.